

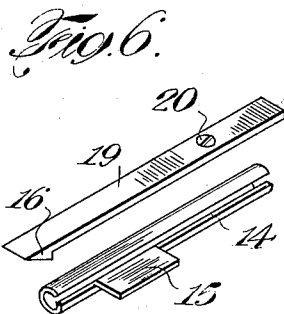
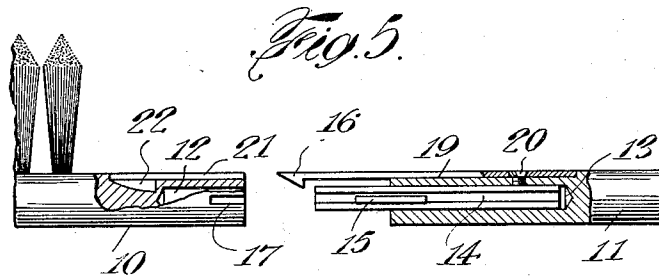
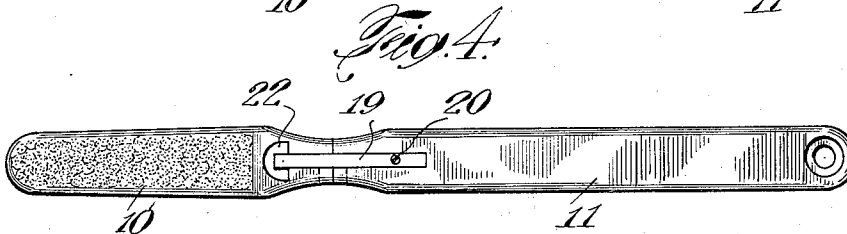
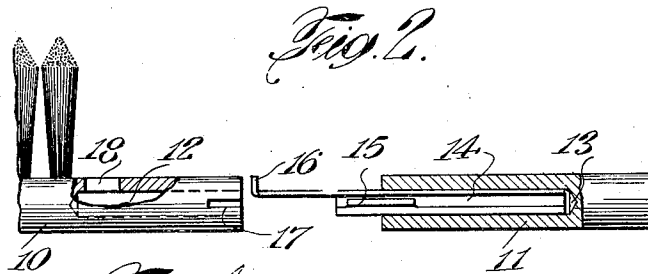
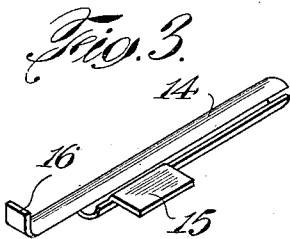
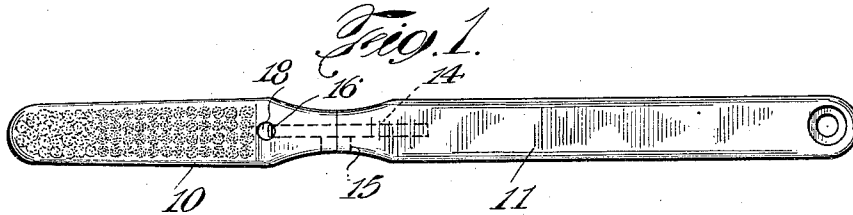
May 24, 1932.

H. D. BELL

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TOOTHBRUSH

Filed March 18, 1931



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UNITED STATES PATENT OFFICE

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TOOTHBRUSH

Application filed March 18, 1931. Serial No. 523,406.

This invention relates to improvements in tooth brushes and has particular reference to tooth brushes in which the bristle support may be readily removed from the tooth brush so that the tooth brush may be made and sold in two pieces, one portion being the bristle supporting element or head and the other element being the handle.

A main object of the invention is to provide simple, strong, durable and economically manufactured elements provided with automatically latching and unlatching means whereby they can be readily assembled together as a complete tooth brush and readily disassembled when new bristles or new bristle supporting elements are to be employed.

A further object of the invention is to provide such a construction of latching and engaging elements cooperating with the head and the handle as will permit the quick and easy assembly of it, and yet be capable of being manufactured at low cost, while at the same time being strong, durable, sanitary and not objectionable in appearance.

Further and more specific objects, features and advantages will more clearly appear from a consideration of the specification hereinafter taken in connection with the accompanying drawings which form part of the specification and which illustrate a present preferred form of the invention.

Briefly the invention in its present preferred form comprises a handle element, a bristle supporting element and cooperating means disposed in said elements to prevent relative longitudinal and turning movement when the elements are properly and operatively engaged.

Preferably one of the elements is provided with a lateral slot and a depression or aperture and the other element is provided with a projecting flange and a projecting finger adapted to respectively engage said slot and depression, when the elements are engaged, and to hold them in this position and prevent

relative turning and longitudinal displacement.

The present preferred form of the invention is illustrated in the drawings, of which:

Fig. 1 is a plan view of the preferred form;

Fig. 2 is a longitudinal section;

Fig. 3 is a perspective view of the latch member;

Fig. 4 is a plan view of a modified form of the invention;

Fig. 5 is a longitudinal section through the form shown in Fig. 4; and

Fig. 6 is a perspective view of the modified form of latch member.

As shown in the drawings the preferred form of the invention comprises a bristle supporting element or head 10 and a handle element 11 provided with bores 12 and 13 opening into adjacent ends of these elements. In the bore 13 is preferably disposed a rolled metal split tube 14 adapted to fit snugly in said bore and to be fastened therein in any suitable manner. This tube is provided with a laterally projecting flange 15 and a hook or finger 16.

The bristle supporting element of the head 10 is provided with a lateral slot 17 adjacent the open end of the bore 12 and with a depression or aperture 18 in its wall near the inner end of bore 12.

When the handle element is to be disposed operatively with respect to the head 10 the finger 16 is slipped into the bore 12 until the finger 16 engages or springs into the hole 18, at which time the flange 15 will fit into the slot 17. The finger will prevent longitudinal displacement of the elements and the engagement with the slot will prevent turning movement. The material of which the latch member or tube 14 is made, as well as the projecting finger 16, will cause the finger to be sufficiently resilient to spring into its hole when properly aligned therewith. Preferably the tube 14 with the flange and the projecting finger are made out of one piece of stamped

metal to reduce the cost of manufacture to the very minimum.

In the modified form of the invention shown in Figs. 4, 5 and 6, the parts are substantially the same except that the projecting hook or finger is now a separate element from the tube 14. In these figures the projecting finger is shown in the form of a plate 19 fastened by screw 20 in a groove in the surface of the handle element 11, and projecting therefrom so that the plate 19 is flush with the surface of the handle. The head 10 is provided with a groove 21 at the inner end of which there is a depression 22. When the handle and the head are operatively engaged the hook 16 and the plate 19 will ride along the groove 21 until it comes in line with the depression whereupon the natural resiliency of the plate 19 will cause the hook 16 to snap down into the depression 22. That portion of the plate 19 lying in the groove 21 will, therefore, be flush with the surface of the head 10. The end of the hook or finger 16 does not quite reach to the end of the depression 22 so that a person can slide his thumb nail under the end of the hook to remove it easily.

To detach the hook or finger 16 of the preferred form shown in Figs. 1, 2 and 3, the finger or a pointed member can be introduced into the hole 18 to depress this hook far enough to permit the handle to be withdrawn.

It will be readily observed that this invention permits the ready assembly of the bristle head so that new bristle heads with new bristles may be substituted at will. The latch member may be mounted without altering the invention either on the handle element or on the head. The reversal of the position of the latch member will merely mean the reversal of the position of the slot and apertures with which the flanges and the fingers on the latch members engage. This simple latching member in either form can be manufactured at low cost and provides a simple, economical, durable, and efficient device whereby the handle on the head can be readily assembled and disassembled. The parts when in position are practically entirely concealed and are not objectionable since they either line within the head and handle or are flush with the surface thereof.

While the invention has been described in detail and with respect to a present preferred form thereof it is not to be limited to such details and forms since many changes and modifications may be made in the invention without departing from the spirit and scope of the invention in its broadest aspects. Hence it is desired to cover any and all forms and modifications of the invention which may come within the language or scope of any one or more of the appended claims.

What is claimed, is:

1. A tooth brush comprising a handle ele-

ment, a separable bristle supporting element, said bristle supporting element having a slot and a depression therein, a one piece metal latch member disposed on said handle element, a projecting flange and a projecting finger on said latch member adapted to engage respectively in said slot and depression when the handle and bristle supporting elements are engaged to prevent relative longitudinal and turning movement.

2. A tooth brush comprising a handle element, a separable bristle supporting element, said last named element having a slot and depression therein, a metal tube disposed in a bore in the handle element, a projecting lateral flange and a projecting finger on said tube, said flange and finger adapted to engage respectively with the slot and depression to hold the elements together and prevent relative longitudinal and turning movement.

3. A tooth brush comprising a handle element, a separable bristle supporting element, both of said elements having bores opening into adjacent ends, said bristle supporting element having a lateral slot adjacent the open end of said bore and an opening in the plane at right angles to the slot at the other end of the bore, a tubular latch member disposed in the bore of the handle element, a lateral projecting flange on said latch member and a forwardly projecting finger on said latch member, said flange adapted to enter said slot and said finger adapted to enter the bore of the bristle supporting element and engage in the aperture therein when the elements are operatively aligned.

4. A tooth brush comprising a handle element, a separable bristle supporting element, both of said elements having central bores opening into adjacent ends, said bristle supporting element having a lateral slot adjacent the open end of its bore and a groove along its top surface in a plane at right angles to said slot, said groove having a depression at its inner end, a tubular latch member snugly disposed in the bore of the handle element, a laterally projecting flange on said tubular member adapted to engage said slot, and a projecting hook on the top surface of the handle element adapted to lie in the groove on the top surface of the bristle supporting element, a hook portion, when the elements are operatively engaged, adapted to lie in said depression, these engagements preventing longitudinal and lateral movement between the elements.

5. A tooth brush comprising a handle portion, a separable bristle supporting element, both of said elements having bores opening into adjacent ends, a metal stem lying snugly in said bores and connecting said elements, one of said elements having a depression on its out surface adjacent its end, the other element having a projecting finger adapted

to extend over the other element and lie in said depression to hold the elements together.

6. A tooth brush comprising a handle portion, a separable bristle supporting element, said elements having aligned bores opening into adjacent ends, a stem lying snugly in said bores and acting to connect said elements, and interlocking members on said elements adapted to hold them together when they are disposed in abutting relation.

Signed at New York, in the county of New York and State of New York, this 17th day of March, A. D. 1931.

HARRY D. BELL.